

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 - 10. (cancelled)

11. (new) Process for measuring the characteristics of a surface coating on a metallurgical product in-line during a feed of the product during manufacture, comprising the steps of exposing a zone of a surface of the product to incident radiation directed orthogonally to the surface and measuring, also in a direction orthogonal to the surface, the radiation energy reflected by the exposed zone, said exposing step comprising illuminating said zone by a lighting optical fibre connected to an incident radiation emission source with a predetermined wavelength and said measuring step comprising measuring the reflected radiation by means of a measuring optical fibre connected to a sensor, stripping free ends of the two optical fibres and holding the stripped ends in the immediate vicinity of each other and parallel to each other.

12. (new) The process according to claim 11, wherein said holding step comprises holding the stripped free ends of the optical fibres at a distance from the surface of the product of between 5 and 50 mm.

13. (new) The process according to claim 11, wherein the radiation used is located in a near infrared range with a wavelength of 830 nm.

14. (new) The process according to claim 11, wherein the measuring step comprises measuring the reflected radiation in at least one direction oblique to the surface of the product to evaluate the energy diffused by the illuminated zone.

15. (new) The process according to claim 14, wherein the measuring step further comprises measuring at an angle between 0 and 30° from the vertical of the surface.

16. (new) Device for measuring the characteristics of a metallurgical product surface coating in-line, during a feed of the product during manufacture, said device including a measuring head with a front surface placed opposite a surface of the product and including a lighting optical fibre and a measuring optical fibre, the two optical fibres each having, at a front face of the head, a free stripped end so that corresponding terminal portions of the fibres are arranged parallel and as close to each other as possible, another end of the lighting optical fibre being connected to a light radiation source and another end of the measuring optical fibre being connected to a sensor, and the device including in addition means for processing a signal supplied by the sensor for determining intensity of the radiation which is transmitted to the sensor by the measuring optical fibre.

17. (new) The device according to claim 16, further including a distance sensor to permanently measure a distance between the free stripped ends of the optical fibres and the surface of the product.

18. (new) The device according to claim 16, wherein the measuring head includes an additional optical fibre connected to a specific sensor and having a free end part of which is oriented obliquely in relation to the free end portion of the lighting optical fibre.

19. (new) The device according to claim 16, wherein the radiation source is a laser diode having an emission wavelength of around 830 nm.

20. (new) Device for measuring the characteristics of a moving steel strip product surface coating in-line, during a feed of the product during manufacture, said device including a measuring head with a front surface placed opposite a surface of the product and including a lighting optical fibre and a measuring optical fibre, the two optical fibres each having, at a front face of the head, a free stripped end so that corresponding terminal portions of the fibres are arranged parallel and as close to each other as possible, another end of the lighting optical fibre being connected to a light radiation source and another end of the measuring optical fibre being connected to a sensor, and the device including in addition means for processing a signal supplied by the sensor for determining intensity of the radiation which is transmitted to the sensor by the measuring optical fibre.